

## Renewable-energy network to drive electric cars

By 2012, Australia could be equipped with an electric vehicle (EV) recharge grid powered by renewables that would provide electric car recharge spots at designated parking lots in residential areas and offices.

US firm Better Place has partnered with AGL Energy and the Macquarie Capital Group to bring the concept of an EV recharge grid powered by renewables to Australia, the world's sixth largest country.

Better Place aims to establish EV support networks around the world and sell access to the grid similar to the way mobile phone companies sell access to mobile telecommunications networks.

The concept, which has the support of the Victorian Government, has also been taken up by Israel and Denmark, where Better Place has been working with Renault and Nissan to develop electric car infrastructure.

Australia has the world's seventh highest per capita rate



of car ownership, with nearly 15 million cars on the road. The average daily commute for Australians is 40 km.

Today's electric batteries have a range of about 250 km. To allow longer drives, Better Place would roll out battery swap stations in addition to the designated recharge spots.

A Macquarie Capital Group spokesperson claims that EVs are a more affordable alternative to combustion-powered vehicles, and that 'the combination of a competitively priced vehicle, being driven by cheaper and cleaner fuel is a compelling business case'.

Macquarie will assist in business development and

Electric cars would simply 'refuel' at designated parking lots or recharge spots on the renewables-powered grid.

(iStockphoto/Sarah Salmela)

help raise AU\$1 billion for the network build, which could bring new jobs to the nation while 'helping the country to take a generational leap forward toward oil independence'.

The project would initially establish Brisbane, Sydney and Melbourne as network hubs linked by battery switch stations in between, enabling drivers to swap batteries.

## Water yield 'supermodel' travels to WA



As was done for the Murray-Darling Basin, researchers will 'supermodel' the water resources of south-western Australia. NASA

Following the success of the CSIRO-driven Murray-Darling Sustainable Yields project (see *ECOS* 141), the Australian Government is providing \$5.19 million for a similar large-scale, water yield assessment to be undertaken in Western Australia.

CSIRO's Water for a Healthy Country Flagship will undertake the South West Sustainable Yields project in partnership with the WA Department of Water. The project, agreed to by the Council of Australian Governments, will be the most comprehensive assessment of water yield to 2030 in WA ever undertaken.

The hydrological 'super-modelling' project will provide information on current and likely future water yield, taking into account the impact of climate change and other risks, in a part of Australia where winter rainfall has declined by about 15 per cent, and corresponding stream flow by over 50 per cent, since 1976.

The assessment will cover 39 043 square kilometres of surface water catchment and 37 186 square kilometres of groundwater management areas stretching from Geraldton to Albany.

## Australian hybrid car battery goes global

Japan's Furukawa Battery Company and East Penn from the United States have licensed CSIRO's UltraBattery technology for commercial production and distribution to automotive and industry sectors in North America, Mexico, Japan and Thailand.

The UltraBattery combines a supercapacitor and lead acid battery into a single hybrid car battery that lasts longer, costs less and is more powerful than current energy storage technologies used in hybrid electric vehicles (HEVs).

Scheduled to be commercially available globally within the next two years, the UltraBattery could significantly reduce greenhouse gas emissions



The UltraBattery will soon be found in hybrid electric cars around the world as well as in wind farms. CSIRO

from the transport sector by lowering the cost of HEVs and increasing their uptake.

CSIRO is currently assessing the UltraBattery for storage of wind-generated electricity.

Field tests are being conducted using a single 20 kW wind turbine with plans for further deployment to larger wind farms Australia-wide.